




Open Heart Surgery

Patient Education





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Welcome to The Mat Gaberty Heart Center

Our mission here at the Mat Gaberty Heart Center at McLaren Macomb is to *improve the health of the people we serve*. In order to accomplish this goal we have developed an extensive program that is built around a team concept. Our multidisciplinary team approach consists of a full range of specially trained physicians, nurses, physical therapists, dietitians, technologists, technicians, social workers, and other important members of our healthcare family.

We are committed to providing the most efficient and cost-effective treatment to assist you throughout the recovery process. Our program values the importance of knowledge. The heart center has developed written and video material to fulfill the hospital's commitment to patient education. We will encourage your active participation in learning about your heart and healthy lifestyle practices to promote healthy living.

The staff is also an excellent resource to answer any of your concerns. Please feel free to ask questions during your hospital stay and after discharge. The Registered Nurse First Assistants (RNFA) are available Monday through Friday, 7:00 a.m. until 5:00 p.m. They can be reached via beeper number (586) 856-0311.

We are honored that you have chosen us as part of your treatment and recovery process. Your health and ultimate well-being is our utmost concern. We welcome you into our Mat Gaberty Heart Center Family.

BEFORE SURGERY

If arriving for surgery from home

- If you are not staying in the hospital until surgery, you will return to the hospital to be seen by the RNFA a day or two before surgery for testing and pre-operative instructions.
- Do not take *Plavix*, *Ibuprofen*, or *Herbal products* 5 days before surgery unless otherwise instructed by your physician. You may use *Tylenol*® if needed.
Do not stop aspirin.
- The evening before surgery, do not eat or drink anything by mouth after midnight. (This is to decrease the risk of choking and prevent food contents from entering your lungs).
- You will be supplied with a special soap to shower the night before surgery and again in the morning before you leave for the hospital, which decreases the bacterial count, helping prevent post surgical wound infections.
- You will also be instructed to brush your teeth and use a special antiseptic mouthwash the night before surgery and again in the morning to diminish your risk of developing pneumonia after surgery.
- The morning of surgery, take your medications as instructed with sips of water only.
- Please leave all valuables (including jewelry) at home for safekeeping.
- Make sure to report to the hospital at the proper time and place (correct entrance) per instructions.
- Your family can accompany you near the surgical area where they will be directed to wait and receive information.

Educational material is available free of charge on the patient television system on channel 50. **Specifically, movie numbers: 105, 106, 107 & 111 relate to open-heart surgery.** None of these programs show surgical images of cardiac surgery, but rather provide valuable information to help your recovery after surgery.

Each patient also receives a cardiac surgery teaching booklet; ideally read sections *one* through *four* before surgery.

BEFORE SURGERY

If staying in the hospital until surgery

- If you stay in the hospital until your surgery date, you may have to leave your patient room for some of your tests to prepare you for surgery. However, most of your pre-operative teaching and testing will occur right at your bedside.
- The evening before your surgery, you will be instructed not to eat or drink anything after midnight to decrease the risk of choking and prevent food contents from entering your lungs.
- A sleeping pill will be available to help you relax and get a good night's rest.
- You will be supplied with a special soap to shower the night before surgery and again in the morning before you leave for the hospital, which decreases the bacterial count helping prevent post surgical wound infections.
- You will also be instructed to brush your teeth and use a special antiseptic mouthwash the night before surgery and again in the morning to diminish your risk of developing pneumonia after surgery.
- Your medications will be given with sips of water only.
- Send your valuables (including jewelry) home for safekeeping.
- Your family should be here several hours before the scheduled surgery time so they can accompany you to the surgical area.
- Your family will be shown where to wait.
- You will be prepared for surgery in a special *Holding Area* before you are taken into the operating room.

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BEFORE SURGERY

Free patient education television programs

1. To access the video on demand system, dial extension 3840 on your patient phone
2. Follow the prompts on the phone, PRESS 2 for video demand
3. Enter the 3-digit number of the video you want to view
4. The system will repeat the number, if correct PRESS 1
5. The system will direct you to the proper channel (50-56)
6. Pressing 2 ends the call, your video will start within seconds
7. The video will automatically STOP when finished.

Note: All the Heart Surgery Videos are flagged with a "□"

PATIENT EDUCATIONAL VIDEO SELECTIONS

ID	Title: HEART	Length
100	Signs & Symptoms of a Heart Attack	15:52
101	Understanding Anticoagulant Meds (Coumadin)	10:01
102	Coronary Angiography and Angioplasty	14:58
103	Smoking: Getting Ready to Quit	15:01
104	Congestive Heart Failure	13:04
105 □	Heart Surgery: Preparing for Surgery	15:52
106 □	Heart Surgery: The First Days of Your Recovery	12:15
107 □	Heart Surgery: Preparing for Discharge	15:12
108	Pacemakers (3rd Edition)	15:39
110	Angina Pectoris (2nd Edition)	12:25
111 □	Heart Surgery: Getting Ready to Leave the Hospital	10:26
112	After Angioplasty: Guide to Recovery & Risk Reduction	43:00
	Title: DIABETES	
200	Introduction to Diabetes: The Game Plan	12:25
201	Diabetes & Nutrition: Eating for Health	10:02
202	Diabetes Foot & Skin Care: In Step (3rd Edition)	13:40
203	Basic Skills for Controlling Diabetes	11:40
204	Sick Day Management: Recognizing the Red Flags	14:13
205	Preventing Long-term Complications of Diabetes (2nd Edition)	16:45
206	Oral Medications for Diabetes (5th Edition)	22:18
207	Injecting Insulin (2nd Edition)	20:20
208	Monitoring Your Blood Glucose: Key Concepts	19:25

BEFORE SURGERY

Pre-operative teaching instructions and testing

Several members of the team will meet with you before surgery to help you prepare for your surgical procedure and your hospital stay.

- **Cardiac Surgeon** is the surgeon who will perform your heart surgery based on the recommendations of your cardiologist and the results of your heart catheterization.
- **Anesthesiologist** is a doctor that specializes in giving medication that allows you to be asleep for surgery.
- **Respiratory Therapists** are specially trained technicians that provide care and treatment for lungs. They will teach you the proper use of a special device called an *Incentive Spirometer* and how to *cough and deep breathe* to help your lungs recover after surgery.

- **RNFA (Registered Nurse First Assistant)** are nurses that have additional training to assist the surgeon in your care throughout your hospital stay. They will initiate pre-op teaching and review the typical course of recovery.

After your surgeon has explained the surgical plan, you will also be required to sign the surgical consent for surgery.

- Pre-operative testing may include some of the following tests:

- EKG (Electrocardiograph)
- Chest x-ray
- Blood work
- Urinalysis
- Carotid Doppler Studies
- Echocardiogram
- Pulmonary Function Testing

WHILE IN SURGERY

The operating room

- You may find the room cold, bright and the operating table very narrow.
- The room may seem a bit busy as each team member prepares for your surgery.
- The surgical cardiac team consists of your cardiac surgeon, anesthesiologist, CRNA (certified registered nurse anesthetist), RNFA (registered nurse first assistant), perfusionist, circulator, and scrub tech.

Cardiac Surgeon – the surgeon who will perform your heart surgery.

Anesthesiologist – a doctor that specializes in giving the anesthetic that allows you to be asleep throughout surgery.

CRNA (Registered Nurse Anesthetist) – a registered nurse with additional training that will monitor you during surgery while you are asleep.

RNFA (Registered Nurse First Assistant) – a specially trained registered nurse that assists the surgeon during surgery and throughout your hospital stay.

Perfusionist – specially trained technicians who operate the heart-lung bypass machine during surgery.

Circulating Nurse – a registered nurse that works in the operating room and is available to provide supplies as needed during surgery.

Scrub Tech – a trained technician that hands the surgeon instruments during surgery.

Things you may feel and experience

- Your arms will be tucked at your side and other monitoring devices will be secured in place.
- Please let the nurse anesthetist or anesthesiologists know if you are anxious (they can give you relaxing medication).
- You will not be awake, you will be totally asleep during surgery.
- Before you actually go to sleep, you will receive oxygen through a mask over your nose and mouth.

WHILE IN SURGERY

MONITORING

Most of the following will be removed within 24 to 48 hours after surgery:

- **IV Lines (Intravenous Lines)** - catheter(s) placed in the vein (usually your arm/hand) so medication, blood, and fluids can be administered as you need them.
- **Arterial Line** - Tiny catheter in your wrist that measures your blood pressure.
- **Pulmonary Artery Line** - a catheter in your neck that monitors your heart pressures closely.
- **Tubes:**
 - **Breathing Tube (Oral Endo-Tracheal Tube)** - used to oxygenate your lungs while you are asleep.
 - **Stomach Tube (Oral Gastric Tube)** - drains off stomach contents while the breathing tube is in place.
 - **Bladder Tube (Foley Catheter)** - drains urine from your bladder.
 - **Chest Tubes** - (about the size of your thumb) removes air and drains fluids from your chest cavity after surgery.
- **Pacemaker Wires** - small, temporary wires are attached to the very superficial part of the outside of the heart. These wires can be connected to a pacemaker to correct a heart rhythm disturbance/irregular beat.

Anesthesia

- It is the practice of administering medication to relieve pain and to provide total care of the surgical patient before, during and after surgery.
- Administration and monitoring of patients while under anesthesia is performed by doctors (anesthesiologists), and registered nurses who have additional training in anesthesiology (Certified Registered Nurse Anesthetists).
- The kind of anesthesia you will receive during your heart surgery is called a general anesthetic.
- **General Anesthesia** - this type of anesthesia puts you to sleep and will require a special breathing tube (Endo-Tracheal Tube) and breathing machine (Ventilator) to breathe for you during surgery.
- The breathing tube will be inserted after you are asleep in the operating room.
- This same breathing tube will be removed in ICU (Intensive Care Unit) usually 4 to 12 hours after surgery.
- You may feel sleepy and not fully remember this phase.

WHILE IN SURGERY

CABG (Coronary Artery Bypass Grafting Surgery)

- Coronary Artery Bypass Surgery uses either a vein or artery to “bypass” or go around blockages in the coronary arteries to supply the heart with oxygen-rich blood.
- There are three main types of vessels used for bypassing coronary artery blockages.
 - Internal Mammary Artery (IMA)** – is on the inside of your chest wall and is often used for coronary artery bypass surgery. One end of the IMA remains attached to a branch of the large artery of the body (*left subclavian*), while the other end is connected beyond the blockage in the coronary artery.
 - Saphenous Vein** – can be harvested from the legs if more than one bypass graft is needed.
 - Radial Artery** – can also be used from your forearm if needed.

Coronary Artery Disease

- The heart works like a pump and is responsible for delivering oxygen-rich blood to all the vital organs of the body.
- The coronary arteries are vital in delivering the blood supply to the muscle of the heart. This keeps the muscle healthy so that the heart can function correctly.
- Coronary Artery Bypass Grafting surgery is needed when the coronary arteries have significant blockages; these blockages prevent adequate blood supply to the heart.
- These coronary arteries, if blocked, can cause chest pain (angina) and damage to the heart muscle (Heart Attack/Myocardial Infarction).
- Bypass surgery, “bypasses” those blocked areas of the coronary arteries so the heart muscle can receive blood supply beyond the blockage point.
- Alterations in lifestyle changes will be necessary to minimize further heart disease and blockages after surgery.

Incisions and Wound Closure

- Everyone will have a chest incision.
- You may also have incisions in your leg(s) if the saphenous vein is needed for other bypasses.
- Your incisions will be closed with an absorbable suture material underneath the skin.
- The skin will be closed with suture that is absorbable or skin staples that will be removed within a few weeks.
- The type of closure is based on what method your surgeon feels will provide the best healing for you.
- At the end of surgery, your incisions will be covered with a sterile bandage.
- Your leg incisions will also be wrapped with Ace bandages for the first 24–48 hours.
- You may also have leg drains for 1–2 days, which help promote healing.

WHILE IN SURGERY

Endoscopic Harvesting

- Endo saphenous vein or radial artery harvesting is a newer technique that uses a tiny camera to harvest the vein from your leg or the artery from your arm.
- This technique is not appropriate for all patients; your surgeon will decide what is best for you and your recovery.
- If this technique is used:
 - **Saphenous Vein** – a small incision will be made near the knee on the inside of your leg along with very tiny incisions at the top and bottom of your leg.

Radial Artery – a small incision will be made on the inside of your wrist with another tiny incision near the bend of your elbow.

- Most patients report less pain and discomfort with this method.
- Even if you have Endo harvesting, it is important to keep your arm elevated or your leg(s) elevated when not walking, which will help decrease pain, swelling and promote healing.

Valve Surgery: Repair and Replacement

- Valves separate the chambers inside the heart and the major vessels that lead into and out of the heart.
- Damaged valves can affect how your heart works.
- When the valves do not work correctly it can affect how well your heart pumps blood and how you feel.
- Valve surgery is usually necessary when heart valves are damaged or malformed and do not open or close properly.
- Valves that do not open or close tightly cause the heart to pump harder.
- Over time this can lead to heart failure.
- Replacing/repairing defective valves allow the heart to pump with less strain, halting the progression of damage to the heart muscle.
- You may require a recent dental exam (within 6 months of surgery).

Causes of Valve Disease

- Valve disease can be caused from several different reasons.
 - **Congenital** (born with a defective valve)
 - **Degenerative** (valve wears out)
 - **Calcification** (hardening of the valve)
- In each of these situations the valve does not function correctly.

Different Kinds of Valve Implants

- Mechanical Synthetic Valves
- Tissue Valves
- Synthetic Ring

Post-Operative Considerations

Depending on the kind of valve used, you may be required to take *Coumadin* (blood-thinner) either short-term or long-term.

IMMEDIATELY AFTER SURGERY

When You First Wake Up

- You may feel tired and confused because of the anesthesia; this feeling will pass quickly.
- You will find your hands gently tied at your side to prevent you from accidentally pulling out any of your tubes or IV's.
- These restraints will be removed after the endotracheal (breathing) tube is removed.
- You will also notice several pieces of monitoring equipment at your bedside. These monitors have alarms, which may periodically sound.
- Do not let these sounds frighten you. This equipment helps the staff closely monitor your condition.

You Will Have A Breathing Tube (Endotracheal Tube) In Your Mouth

- This tube is connected to a ventilator to help you breathe.
- You will not be able to speak while this tube is in place because the tube passes between your vocal cords.
- Your nurse will show you other ways of communicating.
- When you are more awake and able to initiate breaths on your own, the process of weaning from the ventilator begins.
- You will gradually begin to breathe more on your own until the ventilator support is no longer needed. At that time the breathing tube will be removed.
- This process usually takes from 4-12 hours.
- After the tube is removed, your throat may be sore and your voice may be hoarse.

After the Breathing Tube is Removed

- To help your lungs recover you will have oxygen for at least the first few days.
- You will begin using a breathing exercise device called an incentive spirometer.
- You will also be expected to do coughing and deep breathing exercises.
- A stuffed bear or folded blanket will be provided to hold tightly against your chest incision to provide support while coughing.
- The incentive spirometer device and the exercises should be done **10 times hourly** (ideally 2-3 every 10-12 minutes) while awake.
- This will help to clear your lungs of secretions and prevent infections such as pneumonia and other complications.

IMMEDIATELY AFTER SURGERY

Drinking Fluids for the First Time

- Once the breathing tube is removed, you may begin to eat a few ice chips.
- Nausea is a frequent side effect of anesthesia and pain medication.
- Ice chips and fluids should be taken in very small amounts slowly to prevent nausea.
- When you are able to tolerate the ice chips and sips of water, you will begin with a clear liquid diet, and gradually increase to a regular diet.

Getting Up for the First Time After Surgery

- Approximately 4 hours after the breathing tube is removed, you will be assisted to a chair at your bedside.
- This early activity will help you recover faster and prevent complications.
- You may feel slightly dizzy and weak the first few times you get up, however this will improve with each time.
- Turning to your side is easier & less painful. Until your breastbone heals **Do Not** push or pull with your arms.

Pain Medication

- It is normal to feel pain and soreness after surgery.
- Pain medication is available to help make you more comfortable.
- Do not hesitate to ask for pain medication and let the staff know if the medication is not effective in relieving your pain.
- It is important to have good pain control so you will be able to perform the activities necessary for your recovery process.
- Pain medication is usually most effective 30 to 45 minutes after taken.
- Plan your activities (walking, showering, etc.) approximately ½ hour to 1 hour after you receive pain medication while it is most effective.
- Space your pain medication so you remain fairly comfortable and able to perform all your activities throughout the day.
- **For the next week minimally take your pain medication three times a day** (first thing in the morning, mid-day, & before bedtime) even if you are not having pain.
- Be sure to use the bear to hold against your chest incision for support during your deep breathing and coughing exercises.

IMMEDIATELY AFTER SURGERY

Dressings

- Surgical dressings/bandages are often removed 24–48 hours after surgery.
- Your surgeon may apply a special *Silver* dressing to your chest for 72 hours to help prevent wound infections.
- Knee high support stockings may be applied to your legs.
- It is very important to keep your legs elevated at all times unless you are walking.
- You may use a light bandage if your incisions continue to drain.

More Questions

- Your family will be able to see you briefly about an hour after you return from surgery. Scheduled visiting times will be given to your family at this time.
- The heart team asks that only **one single person functioning as the family spokesperson** call the intensive care unit for information.
- This spokesperson can then relay the status information to other family members in a relay fashion. This practice keeps the heart-trained nurse close at the patient's bedside during the recovery process and not answering multiple phone calls to several different family members.
- Sometimes it may be necessary to receive a blood transfusion after surgery.
- Usually within 24 to 48 hours, the remainder of your tubes and IV's are removed.
- You will have a small IV access that can be connected to IV medication for the next few days when needed. This system permits ease in movement and freedom from an IV pole when not receiving medication.
- Patients generally stay in the intensive care unit for 24–48 hours and then will be transferred to CSU (Cardiac Surgical Unit).

CONTINUING RECOVERY

Discharge Instructions

- Utilize your teaching booklet to reinforce helpful tips.
- Feel free to call the **RNFA at beeper (586) 856-0311**.
- You will be provided with written discharge instructions including physical limitations, wound care, follow-up appointments, and other valuable information.
- Shower daily & get dressed each morning.
- Get up and move around at least every hour.
- Gradually increase walking, starting at 5 minutes, 3 times daily to 20 minutes, 3 times daily by adding 1 minute to your walking routine each day.
- Sit down and rest for short periods when tired.

Nutrition

- Eat several small healthy meals high in protein & caloric content.
- For incision healing do not worry too much about salt & fat content for the next 6 weeks.

Emotions/Depression

- It is common to experience a drop in appetite after surgery.
- Some patients experience feelings of being “blue.”
- Call your family doctor if these feelings persist for greater than 1 week. There may be medications that can help your mood for a short period.

Return to Work Guidelines

- Your cardiac surgeon and your cardiologist will inform you when it is safe to return to work.
- The degree of physical requirements and the length of your workday will guide your doctors to inform you when it is safe to return to work.

CONTINUING RECOVERY

Sexual Activity

- Approximately two weeks after surgery resuming sexual activity is safe if you are able to climb two flights of stairs, walk 1 mile, or ride a bike for several minutes without feeling tired.
- Do not assume any position that applies pressure to your arms & chest.
- Postpone sexual activity immediately after a large meal or when you feel anxious or tired.

Home Exercise/Activity

While you are at home, continued exercise is a critical part of your recovery. Exercise improves the circulation to your heart and other muscles. A home exercise program will help you to increase your exercise level safely until you are ready to begin an outpatient Cardiac Rehabilitation program. (Please refer to My Progressive Walking Program Chart found in the back of the booklet).

Exercise tips:

- Limit your initial exercise to progressive walking.
- Wait one hour after meals before exercising.
- Gradually increase your activity beginning with 4 short walks throughout the day rather than one long walk. As you progress through the first 4 weeks of recovery, increase the distance you walk and decrease the frequency. Plan your days activities to avoid becoming over tired.
- Exercise regularly (5-7 times week).
- Maintain good posture.
- Wear comfortable clothing.
- Warm up for 5-10 minutes, this prepares the body for exercise.
- Cool Down for 5-10 minutes this helps the body return to resting rate.
- Avoid walking outdoors if the weather is too hot or too cold.
- Walk with a family member or friend.
- Be aware of your surroundings to prevent falls (uneven ground, hills, or slippery surfaces).
- Do not exercise when you are sick.

Smoking Cessation

- Consider support groups, self-help literature, and medication to promote long-term success.

CONTINUING RECOVERY

Risk Modification

- To minimize further coronary artery disease, it is important to eliminate as many risk factors as possible.

Daily Weights

- Weigh yourself each morning using the same scale.
- Call your cardiologist if you gain greater than five pounds in one week or 2-3 pounds in one day.

Emergency Situations

- Report to the emergency room if you experience any chest pain or severe shortness of breath.

Signs & Symptoms of Infection

- Take your temperature daily each morning.
- Call your cardiac surgeon with any temperature greater than 101 degrees.
- Also, call your surgeon if any of your incision sites are red, painful, or draining cloudy fluid.

Wound Care

- Shower daily with warm soapy water - **avoid perfumed soaps.**
- Wash your chest incision first, all leg incisions second, the rest of your body last.
- Change your clothing/socks daily.
- Do not use any powder, creams, or lotion to any incisions.
- **NO** tub baths, hot tubs, swimming pools until cleared by your surgeon.
- Use light dressing if your incisions are draining clear fluid.

RESPIRATORY: YOUR LUNGS

Oxygen Use

After your surgery, you will receive oxygen therapy. Oxygen therapy will help to decrease the problems that may develop if your lungs are not working well. Oxygen can also make it easier for your heart to work. Your respiratory therapist and your nurse will keep track of your oxygen needs in the hospital. They will let you know when you can stop using the oxygen.

Some patients may need oxygen at home after leaving the hospital. If you are one of them, here is some additional information to help answer your questions.

If you require oxygen at home, a “home care provider” will bring the needed supplies to your home and will teach you how to use them. You will be able to move freely around your home as you recover from your surgery. Your “home care provider” is available for you 24 hours a day.

Remember these important points:

- **No smoking or open flames should be allowed nearby when using oxygen.** Oxygen supports combustion. This means that anything that can burn will do so much more quickly in the presence of concentrated oxygen.
- **Do not change the oxygen level without contacting your physician or “home care provider.”** Oxygen is like a drug. It is not addictive but should only be used as directed. Even if you are short of breath you should not increase the oxygen level you have been prescribed without consulting with your health care provider.
- **Keep the “home care provider” phone number handy in case it is needed.**

Oxygen use in the home is easy and safe when precautions and common sense are used.

RESPIRATORY: YOUR LUNGS

Incentive Spirometer

A surgery such as yours is capable of weakening your respiratory system. When you don't breathe deeply your lungs may not function well and there may be a build-up of secretions within them that will put you at risk for infection. Deep breathing is a very simple way to prevent or correct lung complications.

This deep breathing device, the incentive spirometer, is intended to assist your recovery from surgery and to prevent problems with the function of your lungs. Deep breathing may even help to decrease your hospital stay!

The benefit you get from this therapy depends on the effort you put forth. Please help us to help you recover quickly from your surgery.

Follow these instructions while deep breathing:

1. Sit up as straight as possible.
2. Stand or hold the spirometer upright.
3. **Exhale normally.**

4. Place your lips tightly around the mouthpiece.
5. Inhale slowly and deeply to raise the large float as high as you can.
 - As you practice, try to keep the **small float bouncing between the arrows**. This coaches you to breathe not too fast, or too slow.
 - As you work at it, the distance you move the large float **may increase**. That means your lungs are moving more air in and out. **That's Good!**
6. Hold your breath for 3-5 seconds.
7. Remove the mouthpiece from your lips and exhale normally.
8. Allow the float to fall back to the bottom of the chamber.
9. Ten (10) breaths every hour is recommended.
Ideally 2-3 breaths every 10-12 minutes.

(Deep-breathing techniques presented above may also be performed without a spirometer.)

Deep Breathing Exercises

- After you complete your breathing exercises you should cough to help move any secretions that may be in your lungs.
- If you have pain while coughing or performing these breathing exercises, splint or hold the painful site with a folded blanket or pillow. This may diminish your pain and allow you to complete the breathing exercises. Don't be afraid to ask a nurse or therapist for assistance.

- It is a good idea to continue coughing and deep breathing even after you are discharged.
- You should contact your care provider if you develop signs of a respiratory infection. (Such as increased coughing, a change in the color and amount of sputum, fever, shortness of breath or wheezing.)

Please ask if you have any questions or concerns with this therapy.

NUTRITION BEYOND HEALING

Nutrition Goal for the First 8 Weeks: “Eat to Heal”

Nutrition is a very important part of your recovery after surgery. Eating right during the next two months

is crucial to promote healing, build strength and feel better overall!

High Protein/High Calorie Diet

A nutritious diet is always a necessary component for your body to work its best. Now, more than ever, nutrition is a key factor after your surgery to make sure your body has the necessary “tools” to heal. Good nutrition strengthens the body’s defenses and can result in a quicker recovery period; but why increase

calories and protein? Maintaining a high intake of calories and protein can prevent body tissue from breaking down and can help rebuild healthy tissue after surgery.

Maintain Your Weight

Your main goal now is to eat enough calories and nutrients to *prevent weight loss* and promote healing. *You should try to stay within 5 pounds of your weight before surgery.* After you recover in 8 weeks, weight loss may be appropriate.

No one food or group of foods contain all the nutrients you need.

For good health and healing, you need to eat from all food groups. Your registered dietitian is your best source of information about your diet. Your dietitian will help you

understand the importance of nutrition for healing. To help meet your nutrient needs for healing, you and the dietitian will develop an eating plan based upon your eating habits and the food guide pyramid. The diet will generally be high in calories and protein — and if the dietitian feels you may be at risk of not meeting all of your nutrient needs, a vitamin and mineral supplement may be indicated as a “safety net” to help you heal.

Always remember that natural food is your best source of any nutrient!

Special Nutrients for Healing

Three nutrients play an important role for healing — protein, vitamin C and calcium.

- Protein helps in the repair of tissue.
- Vitamin C assists in wound healing

- Calcium helps with mending bone.

You should try to get 3 servings of foods containing these nutrients per day.

NUTRITION BEYOND HEALING

Foods High in Protein

A 3-ounce portion (about size of deck of cards) is approximately 21 grams of protein.

Lean beef & pork
Poultry
Fish & Seafood

Protein grams vary based on serving size.

Eggs & egg substitutes
Milk, yogurt & cheese
Meat substitutes
Peanut Butter
Dried beans & peas

Foods High in Calcium

Lowfat/skim milk 1 cup
Lowfat/skim yogurt 1 cup
Cottage cheese 1 cup

Cheeses 2 ounces
Sardines with bones 3 ounces
Fortified juices & cereals

Foods High in Vitamin C (Serving size, 1 cup)

Raw green pepper
Cantaloupe
Grapefruit/grapefruit juice
Tangerines
Pineapple/pineapple juice
Plums
Strawberries
Raspberries
Orange/orange juice

Apricots
Tomato/tomato juice
Watermelon
Brussels sprouts
Blueberries
Broccoli
Cauliflower
Fortified juices

Word to the Wise

Nutrition is vital for your recovery. After surgery do not worry about nutrition recommendations unless you have special needs, such as diabetes. If you have any questions, please contact the registered dietitian.

Remember — the most important thing now is to eat!

Loss of appetite or poor appetite is one of the most common problems that occur after heart surgery.

Many things are affecting your appetite including medications, feelings of nausea, and being upset or depressed about surgery. Not eating enough food, however, will delay healing and may increase your risk of infection. The goal is to eat enough of the right types of foods so your body has the energy and nutrients it needs for healing.

NUTRITION BEYOND HEALING

Weight Loss During Healing

Weight loss tells you that your body is not receiving enough calories or “energy” for healing. When you lose weight (compared to your weight prior to surgery) your body is not receiving enough calories to do its

job. In other words, it doesn’t have enough fuel to promote healing so the body must use stored energy in the form of muscle and fat. This could make you weak, delay healing, and increase your risk of infection.

Dietary Guidelines for Heart Healthy Eating

The period of initial healing following your heart surgery will take at least six to eight weeks. When this time is reached and healing is progressing normally, it is recommended you start heart healthy eating. The nutrition guidelines are those recommended by the American Heart Association. These guidelines will help to reduce your blood cholesterol levels and possibly prevent further progression of heart disease.

Remember gradual changes may be the answer to achieve lifelong success with nutrition!

- A **healthy weight** is an important part of controlling blood pressure and reducing blood cholesterol levels.
- Decreasing saturated fat and cholesterol in your diet.
- Increasing fiber in your food choices.
- Decreasing sodium in your diet.

Tips on Low Saturated Fat and Cholesterol

- Eat no more than 3-4 egg yolks per week (Egg whites are not limited).
- Use chicken or turkey (without skin) or fish in most of your main meals. Try cooked dry bean or pea recipes for a meat substitute instead of meat, poultry and fish. They are good sources of protein and fiber.
- Choose lean meats. Lean cuts of red meat include:
 - Beef:** round, sirloin, and tenderloin
 - Veal:** all-trimmed cuts except commercially ground
 - Pork:** tenderloin, leg (fresh), shoulders (arm or picnic)
 - Lamb:** leg, arm, and loin
- Limit your total intake of meat, poultry, and fish to not more than six ounces a day. Start thinking of these items as a side dish instead of the main focus of your meal.
- Broil, boil or bake — **do not fry!**
- Choose fat-free or nonfat milk and low-fat dairy products.
- Limit the high fat snacks such as chips, snack crackers, regular microwave popcorn, etc.

NUTRITION BEYOND HEALING

The Importance of Fiber

Fiber is an important element in a healthy diet. Fruits, vegetables and whole grains are good food selections because they are high in fiber and low in fat. Try to eat

at least 5 servings of fruits and vegetables per day. Eat whole grain breads, cereals and crackers whenever possible.

Decreasing Sodium in Your Diet

Sodium (salt) is a mineral that is essential for good health, but excessive amounts are unhealthy. Too much sodium can aggravate such conditions as high

blood pressure and fluid retention. The recommended daily amount of sodium ranges from 2000 to 4000 milligrams per day.

Beyond the Basics of the Diet

You will learn more about these dietary guidelines by attending the cardiac rehabilitation program and/or monthly classes on Nutrition offered through McLaren Macomb. This valuable program provides further instruction on these guidelines, with tips on eating out, low-fat cooking, shopping and label reading.

If you cannot attend cardiac rehabilitation, it is recommended that you attend a nutrition class for heart healthy eating. **Call (586) 493-8500 for more information on classes available at McLaren Macomb and individual appointments with a registered dietitian.**

CARDIAC REHABILITATION

The Next Step For A Healthier Heart

Good health for the future

After heart surgery (coronary artery bypass graft or valve surgery) one of the best things you can do for yourself is to join a cardiac rehab program.

Cardiac rehabilitation is an essential part of the recovery process. It is recommended by the American Heart Association and the American College of Cardiology.

Ask your physician or cardiologist about the enrollment in our program. The cost of cardiac rehabilitation programs are covered by Medicare or insurance providers.

Benefits

The comprehensive program at McLaren Macomb offers many benefits for people of **all** ages. The program helps patients:

- Learn the correct way to exercise, while being monitored by highly trained health professionals.
- Exercise to strengthen your heart and lungs, and to improve circulation.
- Get advice on healthy eating habits and stress control.
- Get information about smoking, blood pressure, cholesterol, and medications.
- Gain confidence through psychological and social support.
- Reduce your chance of ever having another heart attack or surgery.

Two components for best results

Rehabilitation at McLaren Macomb is a comprehensive program that provides exercise with education.

Exercise

People enter cardiac rehabilitation at varying levels of physical activity.

Regular and appropriate exercise helps participants increase their strength, endurance and mobility. In time, physical exertion becomes less of a problem.

Education

Patients who understand their particular condition and how it can best be managed are the ones who show the most improvement. The education component of rehabilitation teaches participants about their illness, medications, exercise, nutrition, and other factors to help people to live effectively with heart disease.

Sign up for Cardiac Rehabilitation sessions

You owe it to yourself to continue the progress you've made toward a healthier heart.

Take the next step and join one of the sessions that meet regularly in the Mat Gaberty Heart Center. Exercise sessions are held at a variety of times throughout the week.

When you visit your physician or cardiologist, ask about enrollment in the Cardiac Rehabilitation Program at McLaren Macomb.

Please call us with any questions regarding the program at: **(586) 493-3354**

Cardiac Rehabilitation

The next step to help lengthen your life and improve your overall quality of life.

CARDIAC REHABILITATION

Three Phase Cardiac Rehabilitation Program

Inpatient Phase

Inpatient cardiac rehabilitation begins while you are recovering in the hospital. You may meet with members of the Cardiac Rehabilitation team, who will instruct you to:

- Walk and do simple stretching exercises
- Watch educational videos
- You will also be given an exercise program to follow at home

Once home, a staff member from Cardiac Rehabilitation will be contacting you within four weeks. If you have questions prior to that time, feel free to call us at **(586) 493-3354**.

Outpatient Phase

Enrolling in an Outpatient Cardiac Rehabilitation program will be your next step. Depending on your condition and recovery you may begin within 1-4 weeks after you leave the hospital.

- The focus of an outpatient program is exercise, education and lifestyle changes.
- During your exercise sessions, you will wear a heart monitor.
- And will be supervised by the cardiac rehabilitation staff.
- Classes are held at a variety of times.

Maintenance Phase

After you have successfully completed an outpatient cardiac rehabilitation program, you may continue exercising in a maintenance program. While participating in our program, you will still be watched closely by the cardiac rehabilitation team. However, you will have more independence and flexibility in your exercise session.

GENERAL INFORMATION

How the Heart Works

- **Electrical system** - the heart has its own electrical system that directs how the heart beats/pumps.
- **Mechanical function** - the heart's job is to pump blood throughout your body.

Arteries

The heart has two main arteries that supply the blood for the heart muscle:

- Right Coronary Artery
- Left Coronary Artery, which immediately divides into two separate branches
 - Left Anterior Descending
 - Left Circumflex
 - All of these arteries divide into other branches that may be bypassed

Risk Factors That You Can Control

- Smoking
- Overweight
- Inactivity
- Diabetes
- High Blood Pressure (Hypertension)
- High Cholesterol & LDL Cholesterol levels
- Diet
- Stress

Risk Factors That You Can Not Control

- Genetics/your family history
- Age
- Nationality

GENERAL INFORMATION

Controllable Risk Factors

Helpful Suggestions

- Don't smoke, if you smoke now...QUIT.
- Get help through a smoking cessation program if needed.
- Maintain a healthy weight as recommended by your physician through diet and exercise.
- Exercise at least 3 times a week for minimally 30 minutes.
- Control your diabetes and high blood pressure by eating a proper diet and taking your medication as directed.
- Keep all follow-up appointments.
- Do not stop your medications without talking to your doctor first.
- Programs are available to assist filling prescriptions free of charge or for low/ minimal cost.
- Eat a healthy balanced diet that includes fruits, vegetables, high fiber, and limits red meat/fats.
- Practice healthy stress reduction methods.

GLOSSARY OF TERMS

Anesthesia – is the practice of administering medication to relieve pain and to provide total care of the surgical patient immediately before, during and after surgery.

Anesthesiologist – a doctor that specializes in putting patients to sleep and controlling pain.

Anesthetic – a medication used to control pain or put patients to sleep.

Arterial Line – an IV usually placed in the artery of your wrist that monitors your blood pressure very accurately and permits us to check your blood throughout the procedure.

Cardiac Surgeon – the surgeon who will perform your heart surgery.

Cardiologist – a doctor who specializes in medical treatment of heart conditions.

Case Manager – a Bachelor's or Master's prepared nurse who will coordinate your hospital care and plan for your discharge to the appropriate setting.

Cordis Line & Swan Line – a catheter that is passed through a special line (usually in your neck) that monitors your heart pressures closely.

Chest Tubes – tubes (about the size of your thumb) that removes air and drains fluids from your chest cavity after surgery.

Circulating Nurse – a registered nurse that works in the operating room and is available to provide supplies as needed during surgery.

Endoscopic Harvesting – Newer technique utilized to removing radial artery from your arm or saphenous vein from leg to use for bypass grafts.

Foley Catheter – a tube to drain urine from your bladder.

General Anesthesia – this is the type of anesthesia that puts you to sleep and will require a special breathing tube (Endo-Tracheal Tube) and a breathing machine (Ventilator) to breathe for you during surgery.

IV Lines (Intravenous Lines) – a catheter is placed in the vein (usually your arm/hand) so medication, blood, and fluids can be administered as needed.

Nurse Anesthetist – a registered nurse with additional training that monitors you during surgery while you are asleep.

Oral Endo-Tracheal Tube – a breathing tube used to oxygenate your lungs while you are asleep.

Oral Gastric Tube – a tube that drains off stomach contents while the breathing tube is in place.

Pacemaker Wires – are small wires that are temporarily attached very superficially to the outside of the heart. These wires can be connected to a pacemaker to correct a heart rhythm disturbance/irregular beat.

Perfusionist – a specially trained technician who operates the heart-lung bypass machine during surgery.

RNFA (Registered Nurse First Assistant) – a registered nurse that has specialized training and assists the surgeon during surgery and throughout your hospital stay.

Scrub Tech – a trained technician that hands the surgeon instruments during surgery.

RESOURCES

There are many additional resources available to you and your family to learn more about managing your heart disease. They are available at your library, local bookstores, and on the Internet.

General Information About Heart Disease

American Heart Association: **1-800-242-8721**

American Heart Association:
www.americanheart.org

Heart Center on Line:
www.heartcenteronline.com

Heart Surgery

Society of Thoracic Surgery information,
"What to expect after Heart Surgery"
[www.sts.org/sections/patientinformation/
adultcardiacsurgery/index.html](http://www.sts.org/sections/patientinformation/adultcardiacsurgery/index.html)

Diet/Nutrition

National Heart, Lung and Blood Institute Information
Center

DASH Diet Heart Healthy Cookbook
(Publication #2921) **www.nhlbi.nih.gov**

American Dietetic Association **1-800-366-1655**
www.eatright.com

McLaren Macomb: **(586) 493-8500**

Quit Smoking

American Heart/Lung Association
www.alam.org

Smoking cessation classes available
www.cancer.org

Health Departments

Macomb County: **(586) 469-5235**

Oakland County: **(248) 424-7125**

St. Clair County: **(810) 987-5300**

Wayne County: **(734) 727-7000**

Outpatient Cardiac Rehabilitation

The Mat Gaberty Heart Center is located inside
McLaren Macomb at **1000 Harrington Blvd.,**
(586) 493-3354

Stress/Depression

SAMHA'S (Substance Abuse and Mental Health
Services Administration) Center for Substance
Abuse Treatment **1-800-662-HELP** or
www.mentalhealth.org

Doctor Connection: **1-877-627-6248**

Home Care

McLaren Macomb Home Care **(586) 493-8013**

Diabetic Classes

McLaren Macomb **(586) 493-8500**

Heart Support Group

McLaren Macomb
1000 Harrington Blvd.
Mount Clemens, MI 48043
(586) 493-8663

MY PROGRESSIVE WALKING PROGRAM

Each person has a different level of ability. You should discuss the home exercise program that is right for you with your healthcare provider.

Level 1

Week	Time	Pace	Frequency
1	2 min.	slow	5 times daily
2	5 min.	slow	5 times daily
3	8 min.	moderate	3 times daily
4	10 min.	moderate	3 times daily

Level 2

Week	Time	Pace	Frequency
1	5 min.	slow	3 times daily
2	10 min.	moderate	3 times daily
3	15 min.	moderate	2 times daily
4	20 min.	moderate	1 time daily

Level 3

Week	Time	Pace	Frequency
1	10 min.	moderate	3 times daily
2	15 min.	moderate	2 times daily
3	20 min.	moderate	1 time daily
4	20 min.	brisk	1 time daily

Level 4

Week	Time	Pace	Frequency
1	10 min.	brisk	3 times daily
2	20 min.	brisk	2 times daily
3	30 min.	brisk	1 time daily
4	40 min.	brisk	1 time daily

How hard are you exercising?

Count your pulse (heart rate) - Check before, during, and after walking. Initially, a heart rate range of 10-30 beats above your resting pulse is recommended.



McLaren Macomb • 1000 Harrington Blvd.
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MO-SS250(212)